Criterion A: Planning

**House price prediction for teachers**

**Defining the problem**

Client Ms. Wu is a high school teacher teaching water skiing in a Chinese high school. She is planning to sell her house in the Chaoyang district in order to gain money to buy a bigger, closer to school, and quitter new house. She wants to know the price of her house before she goes to the housing agency so that she can prevent herself from falling into the conspiracy of the housing agency that may decreases the predicted price to gain profit. She has gone to several friends, including some teachers, but all of them were not able to provide credible estimation based on the bedroom number, sizes, and most difficultly, the direction and the furniture status. It’s not easy for her to find a easier and more reliable way to get the estimated price of her house.

In Oct. 18th, 2018, Ms. Wu came to out computer science class during the brake and talked about her problem with our computer science teacher. She described what she wanted: to have a computer program with the knowledge of second-hand house prices to give estimated price with the consideration of several features: room number, size, furniture status, floor number, age of built, and so on.

As she was talking about her problem, I thought it would be a intuition of my Internal Assessment because Ms. Wu wanted to solve her house price problem using computer science knowledge. I asked the computer science teacher, and she approved it.

In order to understand the issue more deeply, I decided to meet Ms. Wu in her water skiing class and make an interview to find out details for the program.

**Rationale for Proposed Solution**

I think an effective Python program helps me to solve Ms. Wu’s problem. It’s more compatible for Python to import machine learning module if I may need. Ms. Wu would be able to use the program that has a learning process of second-hand house and get prediction based on her needs of features.

For Ms. Wu, she can access the code with any Python platform and use it without the knowledge of computer programming. She will see the instructions as she runs the program and the asking session where she can type in features of her house, and gets the result of estimation based on machine learning of past traded second-hand houses.

According to these requirements, I decided to make my program in Python because (of):

* I’ve learnt Python in school
* Platform independence
* Compatibility of powerful modules
* Easier to develop for its higher level of language
* Easier for Ms. Wu to use even with no knowledge of programming

**Stating Success Criteria**

1. Program will give instructions at the beginning
2. Program will provide friendly input instructions and exception handlers
3. Program will automatically collect house price information and give prediction with successful machine learning algorithm
4. Program will take every features into account
5. Program will give reliable estimation